

## NEOTROPICAL ARADIDAE XII (HETEROPTERA: ARADIDAE)

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**Abstract** Describes *Bergrothiessa paranensis*, *Kormilevia gerali*, *Notoplocoris ovatus*, *Pictinus rhombocarinatus*, and *Notapictinus micropterus*, five new species from Brazil.

In 1962 Mr. Fritz Plaumann, Nova Teutonia, Santa Catarina, Brazil, sent me a collection of Aradidae taken by him in the states of Santa Catarina and Paraná, for which I express my sincere thanks.

Five species are new and are described herewith. One is a micropterous species belonging to the genus *Pictinus* Stål, 1873, and allied to *P. brasiliensis* (Wygodzinsky), 1948 also a micropterous species of the "fronto group." Another is a micropterous species of the genus *Notapictinus* Usinger and Matsuda, 1959 which until now contained only macropterous and brachypterous forms. An aberrant species of the genus *Noloptocoris* Usinger, 1941, ovate in shape with much reduced lobes on the thorax and abdomen was also in the collection. An additional new species of the genus *Kormilevia* Usinger and Matsuda, 1959, has induced me to devise a broader version of the key for the genus *Kormilevia*; in this I include *K. teresopolitana* (Wygodzinsky) 1948, which was omitted from the key by Usinger and Matsuda (1959, p. 331).

Subfamily MEZIRINAE Oshanin, 1908

Genus *Bergrothiessa* Usinger and Matsuda, 1959

*Bergrothiessa paranensis* n. sp.

Fig. 1

**MALE** Allied to *B. plaumanni* Kormilev, 1960, but slightly larger, tapering anteriorly, widening posteriorly; thorax and abdomen more flattened. Anterolateral angles of pronotum acute, slightly produced forward; lateral borders of pronotum and mesonotum straight. External margins of connexiva VI and VII sinuate. Spiracles II to V ventral, VI to VIII lateral, visible from above. Ovate and round calloused spots on central dorsal plate of thorax and abdomen larger and more distinct than in *B. plaumanni* (almost indistinguishable in latter). Hypopygium same type as in *B. plaumanni*, i.e. small, globose, with triangular elevation of dorsal surface attaining three-fourths median length.

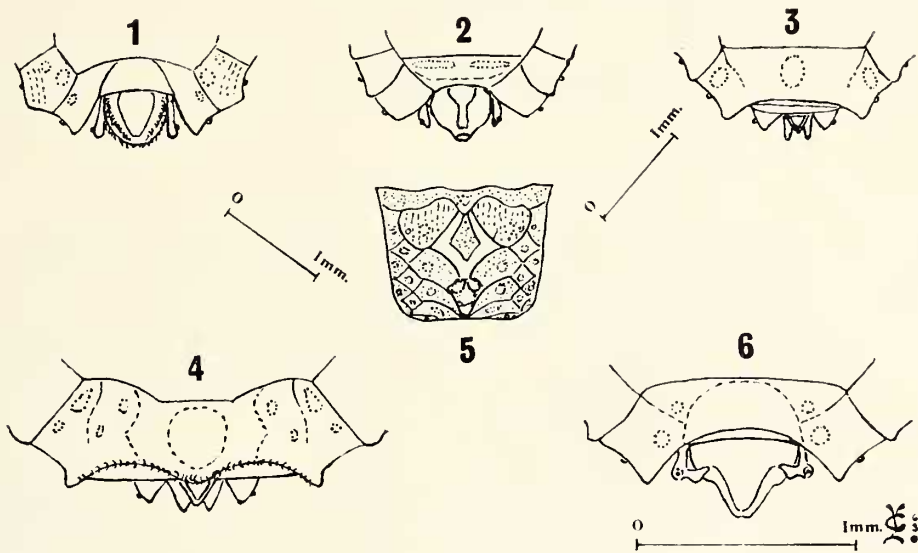
**MEASUREMENTS** Head slightly longer than wide through eyes (20.5:19); antennal segmental ratios: 15:7:20:7.5; pronotum shorter than wide across humeri (12:28);

mesonotum 10:33); abdomen shorter than wide across segment IV (50:68); hypopygium shorter than wide (10:13).

COLOR Testaceous variegated with piceous; connexiva bicolorous, lateral margins black ( $\frac{2}{3}$ ), ochraceous ( $\frac{1}{3}$ ). Femora bicolored, ochraceous, infuscated apically; tibiae bicolored with three dark rings (uniformly colored in *B. plaumanni*).

Total length 4.9 mm.; width across pronotum 1.4 mm; width of abdomen 3.4 mm.

HOLOTYPE Male Mariópolis, Paraná, Brazil. F. Plaumann, collector. Deposited in my collection.



1. *Bergrothiessa paranensis* n. sp., ♂, tip of abdomen.
2. *Kormilevia gerali* n. sp., ♂, tip of abdomen.
3. *Kormilevia gerali* n. sp., ♀, tip of abdomen.
4. *Notoplocoris ovatus* n. sp., ♀, tip of abdomen.
5. *Pictinus rhombocarinatus* n. sp., ♂, central dorsal plate.
6. *Notapictinus micropterus* n. sp., ♂, tip of abdomen.

Key for the species of genus *Kormilevia* Usinger and Matsuda.

1. Spiracles from II to VI ventral, remote from border; spiracles VII and VIII and VIII lateral and visible from above ..... *teresopolitana* (Wygodzinsky)
- Spiracles II to IV ventral, V and VI sublateral or lateral, slightly visible from above. VII and VIII lateral ..... 2
2. Eyes large, as long as or longer than antecular margin from eye to tip of antenniferous tubercle ..... 3
- Eyes small, shorter than antecular margin ..... 4
3. Eyes longer than antecular margin; hypopygium wider than head through eyes; paratergites (lobes of VIII) small, reaching middle of hypopygium *dureti* (Kormilev)
- Eyes as long as antecular margin; paratergites large, reaching two-thirds length of hypopygium ..... *setigera* Usinger and Matsuda
4. Spiracles II to IV ventral; V sublateral, barely visible from above; VI to VIII lateral and distinctly visible from above; median carina of hypopygium not

- reaching apex of segment; paratergites large attaining three-fourths length of hypopygium ..... **gerali** n. sp.  
 Spiracles II to IV ventral; V and VI sublateral or lateral; VII and VIII lateral; median carina of hypopygium reaching or exceeding apex of segment; paratergites small ..... 5
5. Spiracles V and VI sublateral, barely visible from above; VII and VIII lateral; hypopygium as wide as head, median carina extending from middle of disc to apex of segment; paratergites reaching two-thirds length of hypopygium ..... *montrouzieri* (Kormilev)  
 Spiracles V to VIII lateral and visible from above; hypopygium narrower than head, median carina thin, extending from base to short distance beyond apex of segment; paratergites reaching to middle of hypopygium ..... *plaumanni* (Kormilev)

*Kormilevia gerali* n. sp

Figs. 2, 3.

MALE Allied to *montrouzieri* and *plaumanni*, slightly larger and flatter, abdomen relatively wider. Spiracles V sublateral, VI to VIII lateral and visible from above. Paratergites large, extending three-fourths length of hypopygium in male or segment IX in female. Hypopygium subcordate; triangular elevation of dorsal disc originates at base and ends slightly before apex of segment; paratergites in female large, triangular; segment IX small, deeply incised at tip.

COLOR Partially yellow brown and yellow, median elevations on terga IV and V piceous in both sexes, i.e. overall paler and more variegated than in allied species.

MEASUREMENTS Head almost as long as wide through eyes ( $\delta$ -30:31;  $\text{♀}$  33:33); antennal segmental ratios:  $\delta$ -17:10:23:13,  $\text{♀}$ -19:11:26:14; pronotum short and wide ( $\delta$ -20:50;  $\text{♀}$ -22:52); abdomen longer than wide across segment IV ( $\delta$ -90:80;  $\text{♀}$ -100:94); hypopygium shorter than wide: 20:25.

Total length  $\delta$ -4.0 mm.,  $\text{♀}$ -4.5 mm.; width of pronotum:  $\delta$ -1.22 mm.,  $\text{♀}$ -1.30 mm.; width of abdomen:  $\delta$ -2.0 mm.,  $\text{♀}$ -2.35 mm.

HOLOTYPE Male Serra Geral, Santa Catarina, Brazil. December 1958, F. Plaumann, collector. Deposited in my collection.

ALLOTYPE Female Same data as above. Deposited in F. Plaumann collection.

Genus *Notoplocoris* Usinger  
*Notoplocoris ovatus* n. sp.

Figs. 2, 3.

FEMALE Elongate ovate, extensively covered with very short curly hairs.

HEAD Longer than wide through eyes (36:28.5), tapering posteriorly from tip of antenniferous tubercles to base, anterior process strong, slightly tapering, incised at apex, attaining two-fifths first antennal segment; clypeus reaching middle of juga. Antenniferous tubercles stout, dentiform, divergent, reaching one-fifth first antennal segment. Eyes

small, globose, exerted. Postocular margins straight, long, convergent posteriorly, covered with somewhat longer curled hairs. Lateral shalves long, naked. Vertex with double row of setigerous tubercles, slightly convergent posteriorly. Antennae long, slender, segment I with fine, erect hairs each half the length of segmental diameter, other segments naked except IV with brush of hairs on apical half; segmental ratios: 18:10:22:9. Rostrum reaching hind border of rostral groove, latter deep and narrow, closed at posterior end. Ventral surface of head rugose laterad of rostral groove.

**PRONOTUM** Half as long as wide at base (20:40); collar narrow, distinctly separated from disc; anterolateral angles subangularly rounded; lateral margins straight, reflexed; disc with four (2+2) high, longitudinal ridges, two (1+1) lateral or deep median sulcus, two (1+1) at lateral margins of pronotum; posterior margin angularly produced backward. **MESONOTUM.** Much shorter than wide (15:50), subtriangularly elevated at middle, forming two (1+1) high, rounded, reflexed lobes laterad of median elevation; median line marked by double carina; mesonotum separated from metanotum by two (1+1) deep, curved impressions.

**METANOTUM** Formed by two (1+1) large, inflated plates united by thin median strip, and by two (1+1) small, reflexed rounded lobes at lateral margins.

**ABDOMEN** Longer than wide across segment V (90:75); tergum I rather flat naked at middle except for double row of tubercles on median line, and few scattered tubercles laterally. Terga II to VI fused into large rectangular central dorsal plate, disc flat slight rhomboidal elevation on tergum II, tubercle on IV, small triangular elevation on VI; each tergite with four (2+2) rows of round, callous spots, one on each segment in inner row, two in outer row. Tergum VII elevated posteriorly, disc with ring-shaped elevation in middle. Connexivum wide, reflexed, exterior borders festooned, each segment slightly sinuate anteriorly, slightly convex posteriorly. PE-angles of connexiva rounded, those on VII forming small, reflexed, angular lobes. Paratergites (lobes of VIII) small, triangular, almost attaining tip of segment IX, the latter tricuspidate. Spiracles II to VII ventral, remote from margin, VIII lateral and visible from above. Metathoracic scent gland opening slightly visible from above.

**COLOR** Uniformly dark brown; round, calloused spots yellow-brown.

Total length. 8.0 mm.; width of pronotum 2.0 mm., width of abdomen 3.75 mm.

**HOLOTYPE** Female Caiboa, Paraná, Brazil. December 1958. F. Plaumann, collector. Deposited in my collection.

**REMARKS** *N. ovatus* is allied to *N. sobrali* Wygodzinsky but differs by its ovate shape, absence of lobes on abdominal segment VI, very small reflexed lobes on segment VII, and different proportions of the antennal segments.

#### Genus *Pictinus* Stål

#### *Pictinus rhombocarinatus* n. sp.

**MALE** Closely allied to *P. brasiliensis* (Wygodzinsky) but slightly larger, all carinae on pronotum, scutellum, and metasternum more prominent, though similar in design. Tergum I more prominent. Central dorsal plate (terga II to VI) provided with fine transverse carinae marking limits of each segment. Posterior margin of tergum II angularly produced posteriorly, deeply sinuate each side of median protuberance.

Middle of terga III and IV combined provided with large rhomboidal elevation with thick carinate margins (elevation absent in *brasiliensis*); disc of III longitudinally rugose, punctured on terga IV to VI. Middle of tergum V with inverted, triangular elevation, much smaller than rhomboidal elevation on III and IV. Exterior margins connexiva III to VII slightly sinuate, PE angles slightly produced (straight and not produced in *brasiliensis*). Hypopygium slightly wider than in *brasiliensis*, ovate with triangular elevation at middle of base extending to center of dorsal surface. Paratergite in female triangular, reaching middle of segment IX, the latter tricuspidate. Spiracles of II to VII ventral, nor visible from above. Hemelytra reduced to small pads.

MEASUREMENT Head shorter than wide through eyes ( $\delta$ -15:18;  $\delta$ -17:20.5); antennal segmental ratios:  $\delta$ -7.5:6:6:10;  $\delta$ -9:8:—:—; pronotum short, wide ( $\delta$ -10:28.5;  $\delta$ -12.5:34); scutellum half as long as wide ( $\delta$ -8:15;  $\delta$ -9.5:19.5); abdomen slightly longer than wide across segment IV ( $\delta$ -43:41;  $\delta$ -55.5:52.5); hypopygium shorter than wide (10:12).

COLOR Ferruginous, partially piceous to black; rhomboidal elevation, round callous spots of tergum and connexivum yellow-brown; PE-angles yellow; antennal segment I ochraceous with brown tip; femora ochraceous, brown at base and apex, tibiae ochraceous with brown annulation at middle, tarsi and rostrum ochraceous; antennal segments II to IV red-brown with ochraceous bases. In female rhomboidal elevation and round callous spots ochraceous.

Total length.  $\delta$ -3.85 mm.,  $\delta$ -4.70 mm.; width of pronotum:  $\delta$ -1.43 mm.,  $\delta$ -1.70 mm.; width across abdomen:  $\delta$ -2.05 mm.,  $\delta$ -2.63 mm.

HOLOTYPE Male Serra Geral, Santa Catarina, Brazil. December 1958. F. Plaumann, collector. Deposited in my collection.

ALLOTYPE Female Same data as above. Deposited in F. Plaumann collection.

Genus *Notapictinus* Usinger and Matsuda

*Notapictinus micropterus* n. sp.

Fig. 6

MALE Elongate ovate; micropterus, hemlytra reduced to small pads.

HEAD Shorter than wide through eyes ( $\delta$ -25:28.5,  $\delta$ -29:32). Anterior process long, incised in front, reaching to middle of antennal segment I; antenniferous tubercles dentiform, acute, reaching basal fourth of antennal segment I. Eyes large, semiglobose, longer than antecular border; postocular tubercles small, blunt, not reaching outer border of eyes. Vertex with blurred "V"-shaped figure of granulations. Antennal segmental ratios:  $\delta$ -14:9:19:12,  $\delta$ -15:9:21:14. Rostrum reaching hind border of rostral groove, latter closed posteriorly.

PRONOTUM Much shorter than wide across humeri ( $\delta$ -22:50,  $\delta$ -22:55). Collum thin, clearly separated from disc. Anterolateral angles produced forward beyond collum, large, roundly lobulate. Lateral borders straight, divergent posteriorly, hind margin widely curved. Disc vaguely separated into two lobes by thin transverse furrow, fore lobe twice as long as hind; fore disc with two (1+1) round callous spots separated from one another by shallow pit on median line, and obliquely rugose at bases of anterolateral angles; hind disc with sparse, round granulations.

SCUTELLUM Triangular, much shorter than wide at base ( $\delta$ -14:45,  $\text{♀}$ -16:45); median carina tapered posteriorly; disc with sparse granulations; lateral margins straight, carinate, apex widely rounded.

Hemelytra reduced to small cordate pads reaching to tip of connexivum II. Abdomen. Longer than wide across segment IV ( $\delta$ -85:72,  $\text{♀}$ -98:82). Connexivum wide, reflexed in both sexes; exterior margins connexiva II to V straight, barely sinuate on VI and VII; PE-angles not produced on II to IV, barely produced on V and VI, produced posteriorly on VII as rounded lobes. Tergum flat, longitudinally rugose, with four (2+2) rows of callous spots. Central dorsal plate composed of terga II to VI; tergum I separated from metanotum and scutellum, less so from dorsal plate; dorsal plate flat with single elevation in middle of terga IV to VI. Spiracles II to IV ventral, remote from border, V ventral, near border, VI to VIII lateral and visible from above. Paratergites of male in form of bent hook with tips lying on disc of hypopygium (fig. 6); dorsal aspect of hypopygium triangular evenly tapering posteriorly, posterior aspect ovate with thick median ridge. Paratergites of female triangular, incised on outer margin for reception of spiracle, attaining three-fourths length of segment IX which is weakly tricuspidate.

COLOR Ferruginous with piceous spots; abdominal terga VI and VII yellow laterally; connexivum bicolored, II piceous, yellowish posteriorly, III to VII yellow, ferruginous posteriorly; yellow color intensifying from III to VII.

Total length  $\delta$ -3.75 mm.,  $\text{♀}$ -4.32 mm.; width of pronotum:  $\delta$ -1.25 mm.,  $\text{♀}$ -1.40 mm.; width of abdomen:  $\delta$ -1.80 mm.,  $\text{♀}$ -2.05 mm.

HOLOTYPE Male Caioba, Paraná, Brazil. December 1958. F. Plaumann, collector. Deposited in my collection.

ALLOTYPE Female Same data as above. Deposited in the Plaumann collection.

REMARKS *Notapictinus micropterus* is allied to *N. brachypterus* (Drake and Kormilev) but differs from it by its larger size, micropterous hemelytra straight lateral margins of pronotum, and relatively shorter and wider scutellum.

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